

AN5070, AN5071, AN5072

TV Tuner Band Switch Circuits 31V Voltage (Regulator Built-in)

■ Outline

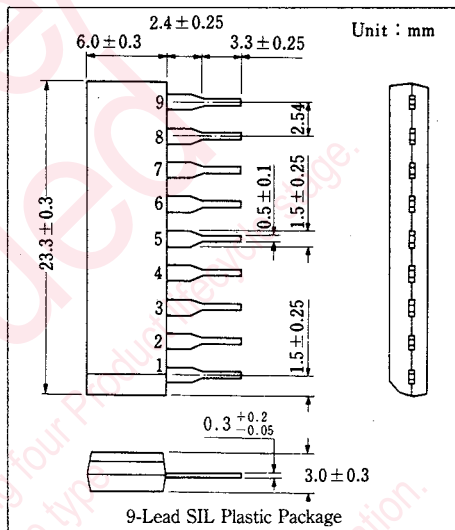
The AN5070, the AN5071 and the AN5072 are integrated circuits incorporating TV tuner band switch circuits and 31 V power supply circuit

■ Features

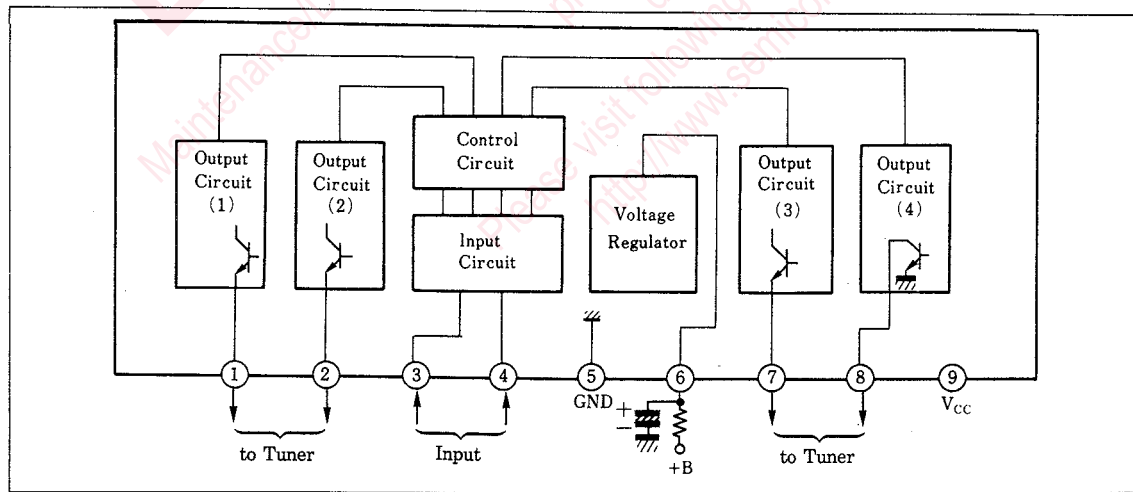
- Tuner band switch circuit with 31 V voltage regulator
- Usable for every tuner by suitable output combination

■ Pin

Pin No.	Pin Name
1	Output (1)
2	Output (2)
3	Input (1)
4	Input (2)
5	GND
6	31.5V Supply Voltage
7	Output (3)
8	Output (4)
9	V _{cc}



■ Block Diagram



■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Supply Voltage	V_{cc}	+18	V
Supply Current	I_s	+14	mA
Power Dissipation	P_D	620	mW
Operating Ambient Temperature	T_{por}	$-20 \sim +70$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

■ Electrical Characteristics ($T_a=25^\circ\text{C}$)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Input Threshold Voltage	V_t	1	$V_{cc}=12\text{V}$	1.5		2.5	V
Input Threshold Current	I_t	2	$V_{cc}=12\text{V}$	100		500	μA
Output Saturation Voltage	$V_{CE(sat)}$	3	$V_{cc}=12\text{V}$, $I_o=-60\text{mA}$		0.3	0.8	V
Pin ⑧ Output Saturation Voltage	$V_{CE(sat)}$	3	$V_{cc}=12\text{V}$, $I_s=20\text{mA}$		0.2	0.5	V
Voltage Regulator	V_{8-5}	4	$V_{cc}=12\text{V}$, $I_s=10\text{mA}$	29.5	31.7	33.5	V
Voltage Regulator with Ambient Temperature	V_{8-5}/T_a	4	$T_a=-20 \sim 60^\circ\text{C}$	-1.0	0	1.0	$\text{mV}/^\circ\text{C}$
Voltage Regulator Voltage for Drift	ΔV_{8-5}	4	As per condition after 5 sec elapsed with SW ON			± 50	mV

■ Input/Output Related (Logic Table)

● AN5070

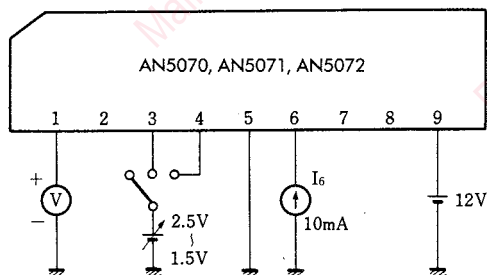
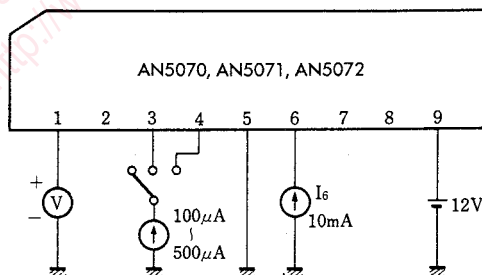
Input		Output				Remarks
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	(Tuning Status)
L	L	V_{cc}	open	open	L	UHF
H	L	open	V_{cc}	open	open	VHF-L
L	H	open	open	V_{cc}	L	VHF-H
H	H	open	open	V_{cc}	open	—

● AN5071

Input		Output				Remarks
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	(Tuning Status)
L	L	V_{cc}	open	open	L	UHF
H	L	open	V_{cc}	open	open	VHF-L
L	H	open	open	V_{cc}	L	VHF-H
H	H	open	open	open	open	—

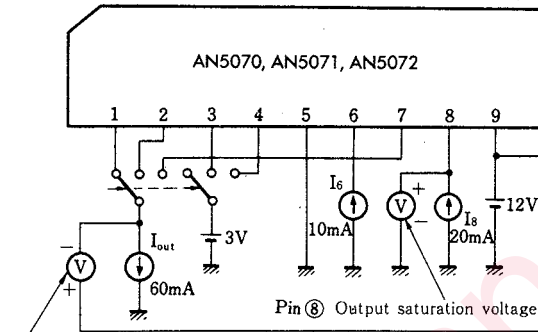
● AN5072

Input		Output				Remarks
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	(Tuning Status)
L	H	V_{cc}	open	open	L	UHF
H	H	open	V_{cc}	open	open	VHF-L
L	L	open	open	V_{cc}	L	VHF-H
H	L	open	open	V_{cc}	open	—

Test Circuit 1 (V_t)Test Circuit 2 (I_t)

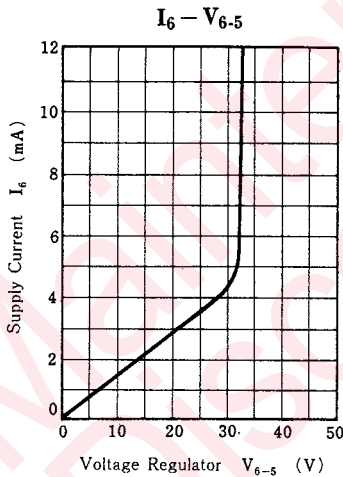
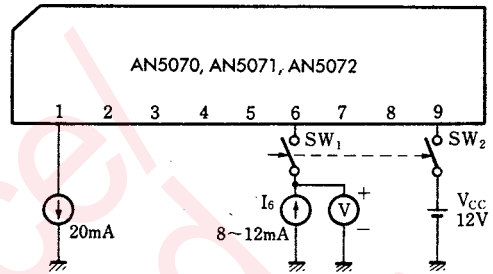
Measure the voltage when Pin ① is changed from V_{cc} to Open (No Connection).

Test Circuit 3 ($V_{CE(sat)}$)

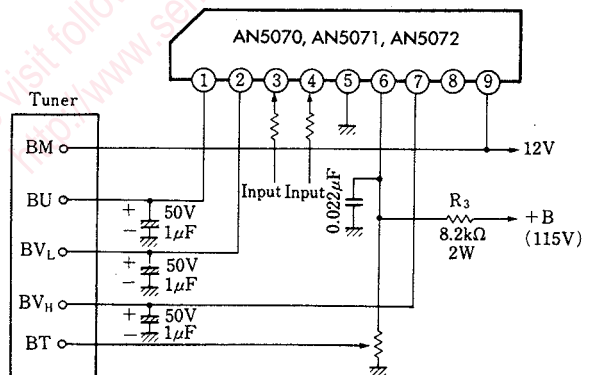
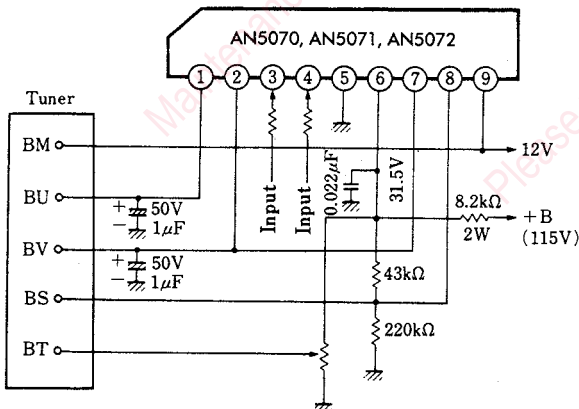


Output saturation voltage
(Pin ①, Pin ②, Pin ⑦)

Test Circuit 4 (V_{6-5} , V_{6-5}/T_a , ΔV_{6-5})



Application Circuits



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